

## CLAIMS

Having thus described the invention what is claimed and desired to be secured by Letters Patent is:

1. A remotely programmable message display system comprising:

a) a host computer server having an operating system, an information database, an e-mail formatting software program, a display unit status handling software program and a dynamic content web page,

b) a first Internet interface coupled to the host computer server for establishing a bi-lateral communication link with the Internet,

c) at least one message display unit having a controller and a second Internet interface coupled thereto, the controller intermediately coupled between the display unit and the second Internet interface, the second Internet interface for establishing a bi-lateral communication link with the Internet,

d) at least one computer connectable to the Internet and operated by a customer desirable of programming messages for display upon the at least one message display unit, the customer having access to the host computer server information database by establishing a communication link between the at least one computer and the host server dynamic content web page through the Internet,

e) at least one display unit message e-mail box located on an Internet service provider computer server for receiving and retaining the messages programmed by the customer for display upon the at least one message display unit, the messages deposited in the at least one display unit message e-mail box by the host server e-mail formatting software program which interfaces with the host server information database after the customer has programmed the messages on the host server dynamic content web page, the display unit controller retrieving the messages from the at least one display unit message e-mail box at a predetermined time, and

f) at least one display unit status e-mail box located on an Internet service provider computer server for receiving message logs and display unit status data from the controller of the at least one display unit, the host server display status handling software program retrieving the logs and status data from the at least one display unit status e-mail box for delivery to the customer in the form of a report.

2. The remotely programmable message display system of claim 1, further comprising:

a) the host server having a display unit controller configuration file software program, and

b) at least one configuration file e-mail box located on a

Internet service provider computer server for receiving and retaining display unit controller configuration file data deposited in the at least one configuration file e-mail box by the host server display unit controller configuration file software program which interfaces with the host server information database after the customer has programmed the configuration file data on the host server dynamic content web page, the display unit controller retrieving the configuration file data from the at least one configuration file e-mail box at a predetermined time.

3. The remotely programmable message display system of claim 2, wherein the configuration file data includes display unit location changes, addresses of e-mail boxes that the display unit controller should call, times that the display unit controller should call-in to its assigned e-mail boxes, display unit dim and bright times and display unit turn-on and turn-off times.

4. The remotely programmable message display system of claim 1, further comprising a host local intranet having a management interface software program and a database backup, the host local intranet interfacing with the host computer server.

5. The remotely programmable message display system of claim 1, further comprising at least one host computer redundant

server configured as a mirror image of the host computer server.

6. The remotely programmable message display system of claim 1, further comprising a firewall coupled between the host computer server and the first Internet interface.

7. The remotely programmable message display system of claim 5, further comprising a firewall coupled between the host computer server and at least one host computer redundant server and the first Internet interface.

8. The remotely programmable message display system of claim 1, wherein the at least one message display unit is an LED sign board.

9. The remotely programmable message display system of claim 1, wherein the controller comprises a processor, memory and a clock and calendar.

10. The remotely programmable message display system of claim 1, wherein the host computer server includes an Internet network protocol time server.

11. The remotely programmable message display system of claim 1, wherein the messages programmed by the customer which are deposited into the at least one message e-mail box include data relative to frames to be displayed on the at least one display unit, playlists of frames representing an order of display and

schedules representing the actual start and stop time for each playlist.

12. A remotely programmable message display system comprising:

a) a host computer server having an operating system, an information database, an e-mail formatting software program, a display unit status handling software program, a display unit controller configuration file software program and a dynamic content web page,

b) a first Internet interface coupled to the host computer server for establishing a bi-lateral communication link with the Internet,

c) a plurality of message display units, each display unit having a controller and an Internet interface coupled thereto, the controller intermediately coupled between the display unit and the Internet interface, the Internet interface of each display unit establishing a bi-lateral communication link with the Internet for each display unit, each display unit having a unique identifier,

d) a plurality of computers, each connectable to the Internet and operated by a customer desirable of programming messages for display upon at least one of the plurality of message display units, each customer having a unique identifier for permitting access to the host computer server information

database, each customer associated with at least one of the plurality of computers for establishing a communication link with the host server dynamic content web page through the Internet,

e) a plurality of display unit message e-mail boxes located on at least one Internet service provider computer server for receiving and retaining the messages programmed by each customer for display upon the plurality of message display units, the messages deposited in the plurality of display unit message e-mail boxes by the host server e-mail formatting software program which interfaces with the host server information database after each customer has programmed their respective messages on the host server dynamic content web page, each display unit controller retrieving messages at a predetermined time from one of the plurality of display unit message e-mail boxes which has been preassigned to be associated with a particular display unit of the plurality of display units, each display unit e-mail box having a unique address,

f) at least one display unit status e-mail box located on an Internet service provider computer server for receiving message logs and display unit status data from all of the controllers of the plurality of display units, the host server

display status handling software program retrieving the logs and status data from the at least one display unit status e-mail box for delivery to each customer in the form of a report wherein each customer receives a report for each display unit assigned to each customer, and

g) a plurality of configuration file e-mail boxes located on at least one Internet service provider computer server for receiving and retaining display unit controller configuration file data deposited in the plurality of configuration file e-mail boxes by the host server display unit controller configuration file software program which interfaces with the host server information database after each customer has programmed the configuration file data for each display unit assigned thereto on the host server dynamic content web page, each display unit controller retrieving the configuration file data at a predetermined time from one of the plurality of configuration file e-mail boxes which has been preassigned to be associated with a particular display unit of the plurality of display units.

13. The remotely programmable message display system of claim 12, further comprising a host local intranet having a management interface software program and a database backup, the host local intranet interfacing with the host computer

server.

14. The remotely programmable message display system of claim 12, further comprising at least one host computer redundant server configured as a mirror image of the host computer server.

15. The remotely programmable message display system of claim 12, further comprising a firewall coupled between the host computer server and the first Internet interface.

16. The remotely programmable message display system of claim 12, wherein the host computer server includes an Internet network protocol time server.

17. The remotely programmable message display system of claim 12, wherein the controller comprises a processor, memory and a clock and calendar.

18. The remotely programmable message display system of claim 17, wherein the display unit controller configuration file data for a particular display unit of the plurality of display units retrieved from the preassigned configuration file e-mail box for the particular display unit is stored into memory of the controller.

19. The remotely programmable message display system of claim 12, wherein the messages programmed by each customer which are deposited into the plurality of message e-mail boxes include



data relative to frames to be displayed on display units assigned to each customer from the plurality of message display unit, playlists of frames representing an order of display and schedules representing the actual start and stop time for each playlist.

20. The remotely programmable message display system of claim 12, wherein the number of display units of the plurality of message display units is equal to the number of display unit e-mail boxes, and each display unit is assigned to its own separate display unit e-mail box.

21. The remotely programmable message display system of claim 12, wherein the number of display units of the plurality of message display units is equal to the number of configuration file e-mail boxes, and each display unit is assigned to its own configuration file e-mail box.

22. A method of programming an electronic message display unit through the Internet, the message display unit displaying graphic illustrations from a light source connected to the display unit, the display unit having an Internet interface for permitting bi-lateral communication through the Internet and a controller, the steps of the method comprising:

a) providing a host computer server having an information database, an e-mail formatting software program, a display unit

status handling software program and a dynamic content web page,

b) providing an Internet interface coupled to the host computer server for permitting the host computer server to bi-laterally communicate with the Internet,

c) providing a display unit e-mail box on an Internet service provider computer server for receiving and retaining messages representing the graphic illustrations for display upon the electronic message display unit,

d) providing a display unit status e-mail box on an Internet service provider computer server for receiving log and status data relative to the electronic message display unit,

e) providing a computing device connectable to the Internet for communicating with the host computer server information database through the dynamic content web page,

f) logging onto the dynamic content web page with the computing device by entering at least one unique identifier,

g) creating a message to be displayed on the electronic message display unit by inputting content into the host computer server information database,

h) formatting the inputted content representing the created message in the host computer server information database by the host server e-mail formatting software program,

i) delivering the created message to the display unit e-mail box through the Internet,

j) contacting the display unit e-mail box through the Internet so that the display unit controller can retrieve the created message,

l) contacting the display unit status e-mail box through the Internet so that the display unit controller can deliver log and status data relative to the electronic message display unit,

m) displaying the created message on the electronic message display unit,

n) retrieving the log and status data relative to the electronic message display unit from the display unit status e-mail box through the Internet by the host computer server display status handling software program,

o) formatting the retrieved log and status data relative to the electronic message display by the host computer server display status handling software program, and

p) delivering the formatted retrieved log and status data relative to the electronic message display unit to a customer who created the message for display in the form of a report.

23. The method of programming an electronic message display unit according to claim 22, wherein the display unit controller

includes memory having a configuration file representing operation parameters for the electronic message display unit.

24. The method of programming an electronic message display unit according to claim 23, further comprising the step of providing a configuration file e-mail box uniquely associated with the electronic message display unit.

25. The method of programming an electronic message display unit according to claim 23, wherein the configuration file can be updated periodically by delivering new configuration file data to the configuration file e-mail box and permitting the display unit controller to communicate with the configuration file e-mail box through the Internet thereby retrieving the new configuration file data retained therein.